

ACC NR: AP7001197

was experimentally investigated. Findings: (1) For precision electrolytic machining, the input-output temperature drop across the work-gap should not exceed 10C, and the electrolyte temperature should not exceed 40C; to ensure this temperature-drop limit, the electrolyte rate-of-flow should be over 0.03 lit/min per ampere; (2) Higher electrolyte temperatures result in greater roughness of machined surfaces; (3) The low temperature drop and necessity for quick removal of machining products from the gap require higher rate-of-flow of electrolyte; the associated higher pressure, however, may result in cavitation; (4) If the protective system turns off short-circuit power within 0.01 sec, the cathode temperature rises little, and cathode-insulating materials thermostable to 120-200C can be used. Orig. art. has: 4 figures, 13 formulas, and 1 table.

SUB CODE: 13 . 09 / SUBM DATE: none / ORIG REF: 002

Card 2/2

Moldavskiy, M. Kh.

USSR/Miscellaneous - Machine Tools

Card : 1/1
Authors : Moldavskiy, M. Kh.
Title : A Single-handled device for controlling velocities and feed mechanisms.
Periodical : Stan. i instr, 3, 26 - 28, Mar 1954
Abstract : A detailed description of a single-handled device for controlling velocities and feed mechanisms of milling machines. Diagrams, formulas for design and construction of such devices are also given.
Institution :
Submitted :

MOLDAVSKIY, M. Kh.

Two-pulse mechanisms for program controlling of movements of
chucking tables. Stan. i instr. 31 no.5:15-17 My '60.

(Machine tools—Numerical control) (MIRA 14:5)

MOLDAVSKIY, M.Kh.

Effect of blocking devices of the gate control gear on the number
of switchings and the wear of the butts of blocked gears. Stan.f
instr. 34 no.7:33-34 Jl '63. (MIRA 16:9)
(Gearing)

MOLDAVSKIY, M.Kh.

Selecting an optimum variant of transmission structure according
to the number of gear-wheel engagements. Stan. i instr. 35 no. 4:
16 Ap '64.
(MIRA 17:5)

SPIZHARSKIY, T.N.; MOLDAVSKIY, M.L.; LINSGAIFF, A.V.

New data on the stratigraphy and age of Biryusa Paleozoic sediments.
Mat. VSEGOI Ob. ser. no.8:67-69 '48. (MIRA 11:4)
(Biryusa Valley--Geology, Stratigraphic)

RANDS, E.A.; MOLDAVSKIY, M.S.

Universal machine for cutting slots and spline grooves. Stan. i instr.
25 no.4:33 Ap '54. (MILB 7:6)
(Machine tools)

MOLDAVSKIY, Mikhail Semenovich; RANTS, Edgar Aleksandrovich; PRUTYAN, L.N.,
redaktor; OFINA, V.I., redaktor izdatel'stva; TIKHONOVA, Ye.A.,
tekhnicheskiy redaktor

[Equipment used in ship repairing and shipbuilding; experience of
the machine shop of the Riga shipbuilding and ship repairing yards]
Prisposobleniya, primenяemye v sudoremonte i sudostroenii: opyt
mekhanicheskogo tsekha Rizhskogo sudostroitel'nogo-sudoremontnogo
zavoda. Moskva, Izd-vo "Morskoi transport," 1956. 94 p. (MIRA 10:2)
(Shipbuilding) (Ships--Maintenance and repair)

ANDREIEV, V.I., inzh.; MOLDAVSKIY, M.S., inzh.

Optical method for checking the installation of mechanical hatch
covers. Sudostroenie 26 no.9:63-65 S'60. (MIRA 13:10)
(Ships--Maintenance and repair)

MOLDAVSKIY, O.D.

A.N.Приход	Кислотное окисление элементов во стальном стекле в гидроокиси бората-
D.D.Макаров	известия.
Д.М.Балашов	
Ю.С.Григорьев	
M.I.Деминский	Влияние щелочей ряда на стальную и нержавеющую сталь.
Н.И.Лаптевский	
С.И.Титов	
G.I.Седов	Затвердевание с водородностью согласия сталью снятых плавильных спиральных.
Е.А.Камышев	Температурные условия затвердевания при охлаждении стальной пластины.
С.С.Седов	
K.I.P.Соловьев	Влияние с водородностью литья на стальную пластику.
Б.А.Борисов	
Б.Б.Громов	
A.K.Приход	Неравномерное размягчение стекла в кисло-
Н.Г.Балашов	ротые щелочи солевые 150x150 мкм.
В.С.Лебедев	
Б.Б.Громов	
K.H.Степанов	Исследование процесса затвердевания при охлаждении стальной пластины 150x150 мкм.
А.А.Маслов	
А.А.Новиков	
Б.Б.Громов	

report submitted for the 5th Physical Chemical
Conference on Steel Production, Moscow-- 30 Jun 1959.

SOV/180-59-2-7/34

AUTHORS: Moldavskiy, O.D., and Pronov, A.P. (Moscow)

TITLE: Influence of Aluminium, Silicon and Chromium on the
Nature of the Primary Structure of Low-Carbon Steel
(Vliyaniye alyuminiya, kremniya i khroma na kharakter
pervichnoy struktury malouglерodistoy stali)

PERIODICAL: Izvestiya akademii nauk SSSR, Otdeleniye tekhnicheskikh
nauk, Metallurgiya i toplivo, 1959, Nr 2, pp 40-42 (USSR)

ABSTRACT: V.I. Danilov has given an equation (Refs 1,2) for the probability of formation of centres of crystallization in the solidification of a super-cooled liquid. The authors briefly discuss this and also the views of Semenchenko (Ref 3) and other workers in this field and give some results of their own experiments. In these, samples of armco-iron were melted in a 10-kg basic-lined, high-frequency induction furnace with the addition of Al, Si and Cr in amounts of 0.5 - 3.0 %. From each melt micro- and macro-sections were prepared, and samples of oxygen- and nitrogen-determinations, chemical analysis and hot cracking and shrinkage tests were taken. Figs 1 - 3 show microstructures of the steel (0.05% C) with increasing contents of aluminium, silicon and chromium, respectively, and its table shows grain sizes

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Influence of Aluminium, Silicon and Chromium on the Nature of the Primary Structure of Low-Carbon Steel

and nitrogen- and oxygen-contents for various percentages of aluminium added in the ladle and actually present in the steel. The authors show the following conclusions from their results and published material: 1) changes in the primary grain size of steel under otherwise similar conditions can be explained by a change in the liquid/growing-crystal surface tension; 2) the change in the primary grain of low-carbon steel on addition of aluminium of up to 0.15% is associated with the formation of high melting-point alumina compounds and nitrides which form centres of crystallization for iron; 3) the increase in grain size with additions of over 0.15% aluminium or over 0.50% silicon is explained by the influence of these elements on the liquid/nucleus surface tension; 4) addition of 0.5 - 3.0% chromium does not

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Influence of Aluminium, Silicon and Chromium on the Nature of the Primary Structure of Low-Carbon Steel

affect the grain size of the steel nor its surface tension.

There are 3 figures (plates), 1 table and 7 references, 6 of which are Soviet and 1 German.

ASSOCIATION: Institut Metallurgii AN SSSR (Institute of Metallurgy, AS USSR)

SUBMITTED: December 16, 1958

Card 3/3

AUTHORS:

Moldavskiy, O.D. and Pronov, A.P. (Moscow) SOV/180-59-3-9/43

TITLE:

Influence of Primary Structure of Steel on its
Tendency to Form Hot Cracks

PERIODICAL:

Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh
nauk, Metallurgiya i toplivo, 1959, Nr 3, pp 47-51 (USSR)

ABSTRACT:

A.P. Bochvar (Ref 1), V.I. Dobatkin (Ref 2) and others
(Ref 3 and 4) have indicated the effect of metal primary
structure on the formation of cracks during
solidification. The present authors have shown that
these considerations apply to steel as well as non-
ferrous metals. They give some of their results for
low-carbon steel containing aluminium, silicon or
chromium. Test conditions were chosen to reduce to
negligible proportions the influence of the width of
the "effective interval" of crystallization on the
tendency to crack. The strength of the steel on
crystallization was taken as the ratio of the load at
which the crack forms to the cross-sectional area at the
crack; the authors admit that the corresponding index
of resistance to cracking is only relative. The test
steel was poured into a special metal mould (Fig 3)
so that one end of the solidifying specimen was held

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Influence of Primary Structure of Steel on its Tendency to Form Hot Cracks

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motionless while the other was attached to a movable head. Measurements were effected with the aid of a strain-gauge bridge circuit (Fig 2); the principles of this circuit have been discussed in literature (Ref 7). The authors have explained previously (Ref 5) the behaviour of aluminium present in excessive amounts. Their present work has shown a close relation between aluminium content and structure (Fig 4) and resistance to cracking (Fig 5). The greatest resistance is shown by metal with a fine primary structure. The authors note that in their work no eutectic films, which could influence the results are formed. With silicon primary-structure coarsening occurred at contents over 1% (Fig 6). Fig 7 shows that the relation between resistance to cracking and silicon content is similar to that for aluminium. With chromium, little change in primary structure of either low or high carbon steels occurs over the range 0.5 to 3% (Fig 8); the resistance to cracking remains unchanged over this range but below 0.5% the resistance falls (Fig 9). In general, the resistance to

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cracking during crystallization is 0.4 to 0.8 kg/mm²,
the primary structure being the dominant factor for
steels whose structure is a single-phase solid
solution of any element in iron. High plasticity at
the solidification temperature reduces the tendency to
hot cracking. There are 9 figures and 11 references,
8 of which are Soviet, 2 German and 1 English.

SUBMITTED: January 22, 1959

Card 3/3

MOLDAVSKIY, O.D. (Moskva)

Role of aluminum in phosphorus-bearing steel. Izv. Akad. SSSR. Otd.
tekhnicheskikh nauk. Met. i topil. no.1:87-95 Ja-F '61. (MIRA 14:2)
(Steel-Metallurgy) (Aluminum)

S/180/60/000/01/012/027
E111/E135

AUTHORS: Belova, L.M., Moldavskiy, O.D., and Pronov, A.P. (Moscow)

TITLE: Influence of the Nature of Grain Boundaries on the Strength of Steel in Solidification

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1960, Nr 1, pp 90-92
(+ 1 plate) (USSR)

ABSTRACT: Grain boundaries are particularly important for the strength of cast materials. Sulphur and phosphorus have a great effect on the tendency of steel to hot cracking. The authors describe their experiments on this effect and on influence of different deoxidizing procedures. Armco iron (0.04% C) and type U7 carbon steel (0.67% C) were melted in a basic-lined 10-kg high-frequency induction furnace and cast at a temperature 10-15 °C above the liquidus. Tendency to hot cracking was studied with an apparatus previously described by Moldavskiy and Pronov (Ref 1). Grain-boundary structure was studied mettallygraphically and with an electron microscope, V.Ya. Nemykina and P.V. Churayev participating. Inclusions were also studied. The influence of sulphur

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Influence of the Nature of Grain Boundaries on the Strength of Steel in Solidification

was investigated during solidification of technical pure iron having up to 0.20% S. The steel was deoxidized with 0.3% Al in the ladle or 1.0% silicocalcium added in the crucible. The effect of sulphur is shown in Fig 1, where strength on solidification is shown as a function of sulphur content for the two deoxidation procedures (curves 1 and 2 respectively), the effect being particularly marked with silicocalcium. Fig 2 shows strength of low-carbon steel with 0.2% S plotted against aluminium content, indicating that resistance to hot cracking rises a little as aluminium-content increases from about 0.2 to about 0.6, little further effect being obtained. In non-metallic inclusions (analyses in Table 1) sulphur exists as aluminium sulphide, precipitated at grain boundaries (Fig 3) and not as eutectic layers. Complex sulphides (Fe, Ca)S precipitate as envelopes on silicates, probably without affecting the increase in tendency to hot-cracking. The influence of phosphorus was investigated during solidification of

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Influence of the Nature of Grain Boundaries on the Strength of Steel in Solidification

technically pure iron and 0.5%-C steel, deoxidized with 0.5% Si; the element (up to about 0.45%) was added as ferro-phosphorus. Fig 5 shows strength as a function of phosphorus content for 0.04 and 0.50% C steels (curves 1 and 2 respectively). Phosphorus thickens grain boundaries (Figs 6, 7) and in the 0.50% C steel leads to complete isolation of grains (Fig 8). The nature of the precipitated phosphorus non-metallic inclusions for this steel with 0.335% P and 0.50% Si is shown in Fig 9. A finer grain structure, obtained by saturations with nitrogen, leads to higher strength on solidification. There are 9 figures, 1 table and 2 Soviet references.

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SUBMITTED: June 24, 1959

(V)

18.920

1418, 11454, 1045

S/180/61/000/001/009/015
E071/E433

AUTHORS:

Belova, L.M., Moldavskiy, O.B. and Pronov, A.P. (Moscow)

TITLE:

The Influence of Oxygen¹⁶ Containing Compounds of Niobium
on the Resistance of Low Carbon Steel to Cracking 27PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh
nauk, Metallurgiya i toplivo, 1961, No.1, pp.119-121

6 TEXT: It was stated in a number of papers dealing with the welding of steel that the resistance to cracking of a weld made with electrodes alloyed with niobium increases at first and then decreases sharply, depending on the concentration of niobium in the weld. The authors attempted to determine the composition of the inclusions formed in steel-niobium compounds, their distribution, their amount and their influence on the resistance of steel to cracking. Armco iron was used for the investigations. Melts were made in a 10 kg induction furnace using a magnesite crucible. The deoxidation and alloying of the steel was done solely with feroniobium (which was added into the crucible 2 minutes before teeming) in quantities such that a 0.4 to 4.5% niobium content was obtained. Chemical composition of feroniobium, %: Nb 54.40; Si 11.29; Al 5.17; C 0.09;

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S 0.013; P 0.11. Specimens for the determination of non-metallic inclusions were cast in steel moulds 28 mm in diameter and 110 mm high. Specimens for determining the resistance to cracking were cast from each heat of metal using a method described in earlier work (Ref.2). The microstructure of the steel and the distribution of non-metallic inclusions were determined metallographically. In addition, qualitative and quantitative analysis of inclusions was carried out (by the method developed by Yu.T.Lukashevich-Duvanova). It was found that the amount of inclusions, their structure and composition change considerably with the content of niobium in steel (see table). The influence of inclusions formed by aluminium and silicon, introduced with ferroniobium was described earlier (Ref.2). In the case of niobium contents of up to 0.5%, comparatively large inclusions of a globular shape of a complicated structure (Fig.1a) were predominant. The above inclusions coagulate easily and consist of niobites (NbOFeO). On increasing the niobium content up to 1%, in addition to globular niobite inclusions, there were some crystalline precipitates of niobium oxides, the proportion of which increases with increasing niobium content. The latter inclusions

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were found to be free lower oxides of niobium. With a further increase in the content of niobium in steel the supersaturation of Nb₀FeO solution in niobites takes place leading to the formation of niobium oxides inclusions in the form of branches and rods (Fig.1,6,B), in addition to niobites. The amount of niobites decreases and even totally disappears at a niobium content in steel of up to 1.5%. At a still higher concentration of niobium (above 1.5%), in addition to blue (Nb₀₂) crystals, dull white crystals of Nb₂O₅ in the form of branches appear (Fig.12) precipitating in steel along the grain boundaries (Fig.13). A study of the structure of steel alloyed with niobium indicated that a noticeable effect appears at an Nb content exceeding 1%. At first this influence is visible in a more pronounced polyhedral shape of the grains (Fig.3a,6,B); further increase in the niobium concentration leads to a considerable diminution of the grain size (Fig.32). The influence of niobium on the resistance of steel to cracking (Fig.2) is in accordance with the shape and distribution of niobium inclusions. At a niobium content below 0.5% the resistance to cracking increases; with the appearance of

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independent oxide inclusions of a boundary nature of precipitation the resistance to cracking decreases whilst a further increase in the niobium content, when the predominant form of inclusions are higher oxides (NbO_2 and Nb_2O_5) separating on grain boundaries, the resistance to cracking decreases to a minimum. Some increase in the resistance to cracking at a niobium content above 2% is apparently associated with the influence of niobium on the diminution of the size of the crystals leading to a spreading of low-melting precipitates over a larger surface area and thus reducing their influence on the properties of the solidified metal. There are 3 figures, 1 table and 2 Soviet references.

SUBMITTED: April 1, 1960

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E071/E433

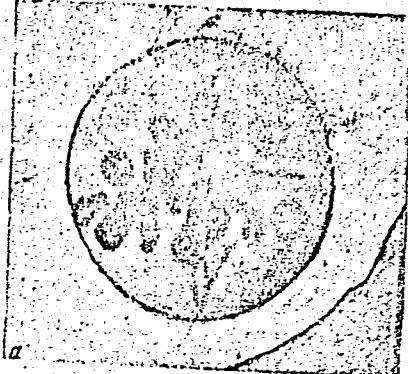
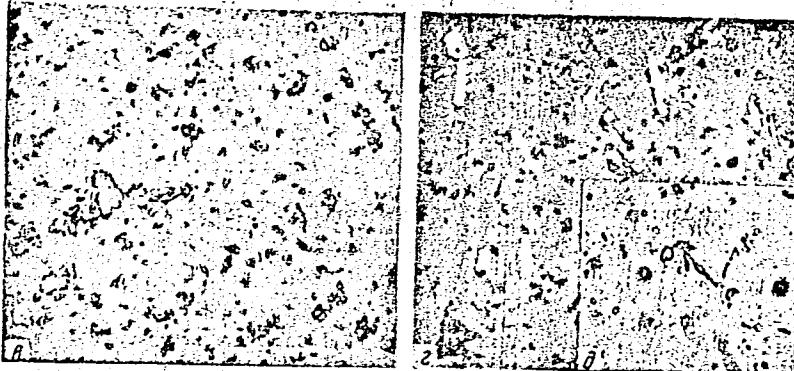


Fig.1. a - inclusions of niobates in steel of the composition:
0.04% C, 0.11% Nb (x1000);
b - rejected inclusions of niobates and of free niobium
oxides in steel of the composition 0.04% C,
1.09% Nb (x600)

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- Fig.1.
- B** - rejected inclusions of NbO_2 in steel of the composition 0.04% C, 1.57% Nb (x600);
 - 2** - rejected inclusions of NbO_2 and Nb_2O_5 in steel of the composition 0.04% C, 3.09% Nb (x600);
 - 3** - niobium oxides along the boundaries in steel of the composition 0.04% C, 3.09% Nb, polished surface unetched

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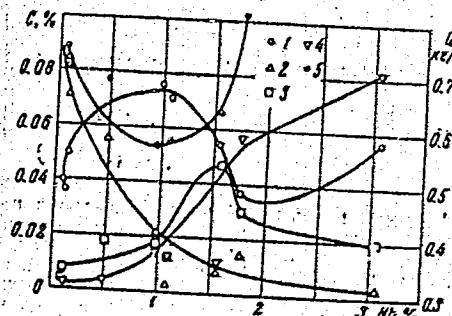
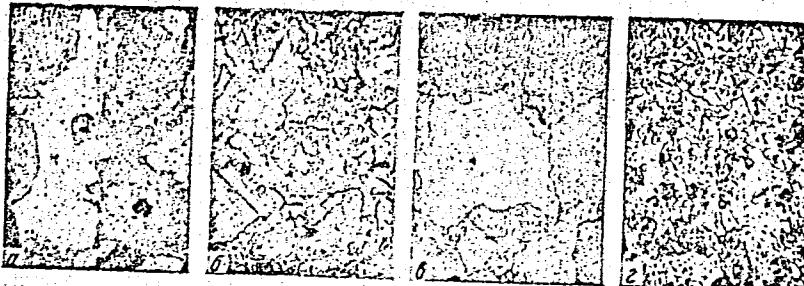
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Fig.2. Resistance to cracking of steel Q , kg/mm^2 and contents of niobium oxides in the non-metallic inclusions in % as a function of the niobium concentration in the steel:
1 - limit of resistance to cracking; 2 - Nb_2O_5 ; 3 - Nb_2O_3 ; 4 - Nb_2O_5 ; 5 - total of all the niobium oxides.

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Фиг. 3. ВлияниеNb на микроструктуру малоуглеродистой стали: а - 0.11% Nb, б - 0.98% Nb, в - 1.83% Nb, г - 3.09% Nb; травление 3%-ной HNO₃ (x100)

Fig. 3. Influence of niobium on the microstructure of low-carbon steel: а - 0.11% Nb, б - 0.98% Nb, в - 1.83% Nb, г - 3.09% Nb, etched with 3% HNO₃ (x100).

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Nb в стали, %	Содержание окислов ниобия в неметаллических включениях, % от растворенного металла				Оксидные включения ниобия*, %
	NbO	Nb ₂ O ₃	Nb ₂ O ₅	Сумма окис- лов ниобия	
0.10	0.085	0.0025	0.00200	0.08950	80
0.11	0.072	0.0074	0.00213	0.08153	63
0.50	0.056	0.0184	0.0300	0.07740	44
0.98	0.022	0.0170	0.01450	0.05350	25
1.00	0.030	0.0117	0.01200	0.05370	25
1.57	0.000	0.0470	0.01080	0.00680	30
1.83	0.015	0.0310	0.05700	0.10300	45
8.09	0.004	0.0210	0.08200	0.10700	48

* В процентах от всего количества включений, остальное Al₂O₃, SiO₂, FeO).

Table. Legend: (1) Niobium in the steel, %; (2) Content of niobium oxides in the non-metallic inclusions, % of the dissolved metal; (3) Niobium oxides, total; (4) Oxide inclusions of niobium.

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MOLDAVSKIY, O.D.

Effect of nonmetallic inclusions on the crack resistance of phosphorous steel. Lit. proizv. no. 9:12-13 S '61. (MIRA 14:9)
(Steel--Metallography) (Thermal stresses)

MOLDAVSKIY, O.D., inzh.

Nonmetallic inclusions of phosphorus in steel. Stal' 21 no.5:441-
445 My '61. (MIRA 14:5)

I. Institut metallurgii AN SSSR.
(Steel--Metallography)

MOLDAVSKIY, O.D.; KARAKULA, M.V.; KULINICH, V.P.

Improving the quality of GL3L steel. Lit. proizv. no.114-7 N '62.
(MIRA 15:12)
(Manganese steel—Metallurgy)

BURTSEV, V.T.; MOLDAVSKIY, O.D.

Vacuum arc furnace for steelmaking. Biul.tekh.-ekon.inform.Gos.
nauch.-issl.inst.nauch.i tekhn.inform. no.2:3-6 '63.

(MIRA 16:2)

(Electric furnaces)

PROXOSHKIN, D.A.; MOLDAVSKIY, O.D.; BANNYKH, O.A.; KOVNERISTYY, Yu.K.

Effect of phosphorus and aluminum on the mechanical
properties of austenitic chromium-manganese steel. Izv. vys.
ucheb. zav., chern. met. 6 no.12:147-151 '63.
(MIRA 17:1)

MOLDAVSKIY, O.D.

[Role of silicon and aluminum in reducing the harmful effect of phosphorus on the quality of steel] Rol' kremnia i aliuminiia v oslablenii vrednogo vliianija fosfora na kachestvo stali. Moskva, Izd-vo "Metallurgija," 1964. (MIRA 17:6)
87 p.

MOLDAVSKIY, O.D. (Moskva); PRONOV, A.P. (Moskva); Prinimali uchastiye:
VASIL'YANINA, O.V.; LUKASHEVICH, V.Ya.; KRYGLOVA, Ye.V.

Speed of removal of nonmetallic oxide inclusions in liquid steel. Izv.
AN SSSR. Met. i gor. delo no.5:23-34 S-O '64.
(MIRA 18:1)

POLYAKOV, A. Yu. (Moskva); VOLKOV, S. Ye. (Moskva); KASHIN, V.I. (Moskva)
MOLDAVSKIY, O.O. (Moskva)

Studying the conditions of liquid steel desulfurization with the
help of CaF₂-base slags. Izv. AN SSSR Met. i gor. delo no.38
52-57 My-Je 64 (MIRA 1787)

14(5)

SOV/92-58-9-7/36

AUTHORS: Moldavskiy, O.P., and Drobyshevskaya, N.I., Members of the VNIGNI

TITLE: Prevention of Caving (Bor'ba s obvaloobrazovaniyem)

PERIODICAL: Neftyanik, 1958, Nr 9, pp 8-9 (USSR)

ABSTRACT: The authors state that the drilling of boreholes at the Goryuchkinskaya geological platform (Saratov region), combined with the use of water, mud or other liquids as drilling fluids leads to caving of argillaceous sandy series of the Upper Carboniferous sediments. This caving complicates the drilling operation and renders it very difficult. Therefore in 1956 - 1957 the VNIGNI (All-Union Petroleum Scientific Research Institute for Geological Survey) assisted by local drillers, studied the possibility of reinforcing the caving arenaceous and argillaceous series. The formation was first flushed and then the resultant cavities were cemented. The authors describe in detail the procedure applied to borehole No.17 at the interval between

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756 - 788 m, where argillaceous sandy series were 32 m thick. Results of experiments were found satisfactory and further similar tests were conducted at the Kolotovskaya platform of the Saratov region. The reinforcement of clay and sandy formations by flushing them and cementing the resultant cavities eliminates the risk of tool stalling and other complications. It also makes possible the use of water instead of mud when carboniferous sediments are reached. The discussed method of reinforcing the argillaceous sandstone formations has now been introduced in all wells of the Goryuchkinskaya and Kolotovskaya platforms.

ASSOCIATION: Nizhne-Volzhskiy filial VNIGNI (The Lower Volga Branch of the VNIGNI)

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MOLDAVSKIY, Oleg Petrovich; MARKUSHIN, Gennadiy Nikolayevich;
POLYAKOV, Lev Petrovich; RAZUVAYEV, Vladimir
Dmitriyevich; FOFANOVA, L., red.

[Improving boring equipment and technology] Sovershen-
stvovanie tekhniki i tekhnologii burenija. [By] O.P.
Moldavskiy i dr. Saratov, Saratovskoe knizhnoe izd-vo,
1963. 80 p. (MIRA 17:7)

MOLDAVSKIY, O.P.; KVITKO, V.M.

Core sampling using sectional core turbobits. Burenie no.2:
18-20 '65. (MIRA 18:5)

1. Konstruktorskoye byuro Nizhne-Volzhskogo soveta narodnogo
khozyaystva.

GRYZOV, I.S.; MOLDAVSKIY, O.P.; CHUPROV, F.F.

Testing diamond bits in Saratov Province. Burenje no.11:25-31
(MIRA 18:5)
164.

1. Upravleniye neftyanoy i gazovoy promyshlennosti Privalzhskogo
soveta narodnogo khozyaystva po bureniyu i ob"yedineniye
"Saratovneftegaz".

RED'KO, D.I.; MOLDAVSKII, P.Yu.

Putting innovators' methods into practice. Spirit.prom. 21 no.1:33-
34 '55. (MIRA 8:5)

1. Vinnitskiy spirtovoy trest.
(Distilling industry)

~~RED'KO, D.I., MOLDAVSKIY, P.YU.~~

Operational experience of a progressive plant. Spirit.prom. 21
(MLRA 9:3)
no.4:22-23 '55.

1. Vinnitskiy spiritovyy treat.
(Bolshaya Martynovka--Distilling industries)

RED'KO, D.I.; MOLDAVSKIY, P.YU.; BERENSHTEYN, A.F., spetsared.; KOVALEVSKAYA, A.I., red.; KISINA, Ye.I., tekhn.red.

[Progressive practices of the Martynov Alcohol Plant] Peredovoi opyt Martynovskogo spirtovogo zavoda. Moskva, Pishchepromisdat, 1956. 47 p. (MIRA 11:12)
(Martynov--Distilling industries)

RED'KO, D.I.; MOLDAVSKIY, P.Yu.

Work of operational and technical councils. Spirt. prom. 22
no. 3:24-25 '56. (MIRA 9:11)

I. Vinnitskiy spirtovyy treat.
(Distilling industries)

MOLDAVSKIY, P.Yu.

Remodeling a beer distilling apparatus for the distillation
of molasses beer. Spirit. prom. 24 no.3:39-40 '58. (MIRA 11:6)
(Distillation apparatus)

MOLDAVSKIY, S.B., inzh.

Signaling and blocking device for autoclaves, Bezop. truda v
prom. no. 2:31-32 F '63 (MIRA 15:2)

I. Izhorskij zavod.
(Autoclaves-Safety appliances)

MOLDAVSKIY, V.B.

Surgical correction of neglected dislocations of the femur caused by injury. Ortop., travm. i protex. 18 no.2:59 Mr-Apr '57.
(MIRA 10:8)

1. Is Chernovitskogo meditsinskogo instituta i Chernovitskoy oblastnoy klinicheskoy bol'nitay (glavnyy vrach - kandidat meditsinskikh nauk, P.T.Karavayev)
(FEMUR--SURGERY)

MOLDAVSKIV, V.L.; BLINOVA, M.V.; BABEL', V.G.; BUSLOVICH, Ye.Ya.;
USMANOVA, M.Sh.

Production of dibasic acids by oxidizing oxy acids with nitric acid. Zhur.prikl.khim. 33 no.2:463-467 F '60.
(MIRA 13:5)

I. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimi-
cheskikh protsessov.
(Acids, Organic) (Nitric acid)

MOLDAVYANU, K., VARAKIU, N., DOMILESCU, K., DRAGICH, K. (Doctors, Bucharest Military-Veterinary Scientific-Research and Medical Center), and MARINESCU, I. (Laureate of the State Premium, Doctor).

"Clinical observation of horses during their feeding with corn".

Veterinariya, Vol. 38, No. 2, 1961, p. 73.

MOL'DENGUYER, O.

2-Acetamido-3-[2']furyl]-acrylic acid. Sint. geterotsikl. soed.
no.4:12-14 '59. (MIRA 13:11)
(Furanacrylic acid)

MOLDENHAUER, W.

The value of splenoportography in the diagnosis of pancreatic diseases. Cesk. radiol. 19 no.4/5:328-332 Ag '65.

1. Medizinische Universitätsklinik Rostock, DDR.

L 45948-66

ACC NR: AP6005980.

SOURCE CODE: PO/0101/65/000/003/0035/0039

AUTHOR: Moldenhawer, Andrzej (Engineer)

26

B

ORG: none

TITLE: Present trends in the design of air-cushion vehicles

SOURCE: Warsaw. Instytut Lotnictwa. Biuletyn informacyjny, no. 3, 1965, 35-39

TOPIC TAGS: air cushion vehicle, vehicle engineering

ABSTRACT: This is a general review of several distinct applications of air-cushion vehicles (i.e., amphibian, marine, overland, rail mounted, flying wing). Major trends in design principles, as well as design difficulties, are indicated for each class. Attention is focused on the inclusion of elastic aprons to overcome terrain feature difficulties, such as waves or roadbed obstacles, and to improve the service life of hull or body elements. Also discussed are details of compressed air ducting related to minimal consumption of horsepower for air cushion maintenance, steering problems in amphibian designs, forward motion systems, air compression systems, etc. Several illustrations are included. Major references are to the British SRN group of amphibian designs. Orig. art. has: 9 figures.

SUB CODE: 013/ SUBM DATE: none

Card 1/1 b1E

L 29941-66 RG

ACC NR: AP6002839

(A)

SOURCE CODE: P0/0101/65/000/004/0016/0018

AUTHOR: Moldenhawer, Andrzej (Engineer)

36

ORG: none

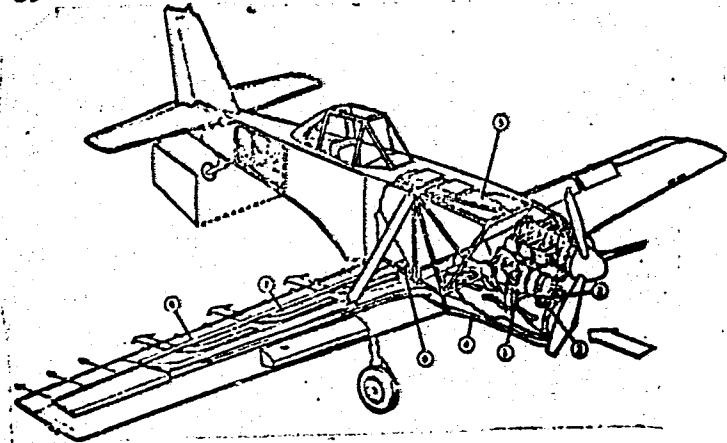
B

TITLE: Spraying aerodynamicsSOURCE: Warsaw, Instytut lotnictwa, Biuletyn informacyjny, no. 4,
1965, 16-18TOPIC TAGS: agricultural engineering, insect control, ~~pest control~~,
plant disease control, ~~pest control~~, ~~agricultural engineering~~, ~~pest control~~, ~~aircraft~~
~~airplane aircraft~~

ABSTRACT: The prevailing methods of spraying liquid and pulverized chemicals by airplane are described and their shortcomings noted. It is stated that the shortcomings can be eliminated by employing pneumatic spraying inasmuch as it is more efficient and conducive to uniform distribution of the chemicals over the fields. In pneumatic spraying the liquid or pulverized chemicals were first carried inside and afterwards outside the airplane with the aid of a special air stream of high intensity generated by a motor driven fan. A prototype of an airplane designed for pneumatic spraying is shown below.

Card 1/2

L 29941-66
ACC NR: AP6002839



It has an auxiliary piston engine of 150 h.p. (1) which drives a fan (3) with the aid of wedge-shape belts (2), a compressed air duct (4), a tank for the chemicals (5), a fuel pump with drive from the engine (6), air ducts buried in the wing (7), and nozzles through which the air-chemical mixture flows in. The aircraft specifications are: power of the propulsion engine - 290 h. p., flying weight - 2,350 kg, capacity of reserve tank - 1.1 m³, maximum velocity - 240 km/hr, spraying rate - 220 kg/ha, i.e., 40 ha/hr, and fan efficiency - 10 m³/sec.

Orig. art. has: 7 figures.
Card 2/2 (c) SUB CODE: 0102, 06/ SUBM DATE: none

L 09043-67

ACC NR: AP6032015

SOURCE CODE: P0/0101/66/000/015/0028/0033

AUTHOR: Moldenhauer, Andrzej (Engineer)

34

ORG: none

TITLE: An air cushion vehicle in Poland

SOURCE: Warsaw, Instytut Lotnictwa, Biuletyn Informacyjny, no. 15, 1966, 28-33

TOPIC TAGS: air cushion vehicle, hovercraft, agricultural machinery, crop dusting vehicle, plant disease control

ABSTRACT: Research has been initiated at the Main School of Agriculture, Department of Agricultural Engineering in Warsaw on the construction and testing of a large hovercraft which could possibly be used for crop dusting and the transport of insecticide powder. This self-propelled air-cushion vehicle will have an annular nozzle and a lift fan driven by a 45-hp automotive engine. The vehicle will be able to move over any flat ground covered by low vegetation as well as over water and snow. Its payload will be 0.5 tons, which is sufficient for testing spraying and aerosol equipment. The following specifications on the ACV are given: length, 5 m; width, 3 m; height, 1.7 m; air cushion area, 13 m²; air pressure in cushion, 55 to 100 kg/m²; weight of craft,

Card 1/2

L 09043-67

ACC NR: AP6032015

550 kg; admissible height of obstacle, 0.2 m; dusting rate, 20 ha/hr;
and payload, 500—600 kg. Orig. ext. has 7 figures and 2 tables.
[W.A. 50]

SUB CODE: 01,06,02/ SUBM DATE: none

Card 2/2 not .

CA

J7

Nicandra physalodes, a new oil-producing plant.
K. Molekular. Przemysl Rolny i Spolywcy 4, 50
(1980) (in Polish).—Nicandra physaloides planted in
Poland yields from 1 ha. 800-1000 kg. seeds contg. 18%
oil, a valuable raw material for the terrific industry.

W. Siebarski

MOLDENHAUER, KONSTANTY

Agrotechnika roslin oleistych. Warszawa, Panstwowe Wydawn. Rolnicze i Lesne, 1951. 111p. Agrotechny of oleaginous plants

DA

Not in DLC

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 10, October 1957. Uncl.

MOLDENHAWER, K.

Polish Technical Abst.
No. 1 1954
Agriculture, Food Processing
Industry, Forestry, Fisheries

2652

✓ Moldenhawer K. New Oleaginous Plants.

633.85

"Nowe rośliny oleiste". Przemyśl Rolny i Spożywczy. No 2, 1953.
op. 53—62.

Experiments have shown the value of the following new oleaginous plants, introduced as field crops in Poland: *Crambe abyssinica* L., *Carthamus Tinctorius* L., *Perilla ocimoides* L., *Cucurbita pepo* L., *Ricinus communis* L., *Sinapis alba* L., *Brassica juncea* L., *Helianthus annuus* L. The fat content of the plants listed is given, together with such characteristic properties of the oil as the iodine value, and full analyses results for selected plants. Furthermore, 16 varieties of wild oleaginous plants were studied; these plants occur in Poland and may possibly be of value in the future for the fat industry.

MOLDENHAWER, K.

"Planting oilseed plants in the Institute for the Breeding and Acclimatization of Plants." p. 63 (Nowe Rolnictwo, Vol. 2, no. 7, July 1953. Warszawa.)

SO: Monthly List of East European Accessions, Vol. 3, No. 2, Library of Congress,
Feb. 1954, Uncl.

MOLDENHAWER, K.

"How to achieve good poppy seed crops."
"Maize for pasture."
(Plon, Vol 4 No 4 Apr 53 Warszawa)

p. 11

p. 12

SO: Monthly List of East European Accessions, Vol 2 No 9 Library of Congress Sept 53 Unclassified

MOLDENHAWER, K.

Sowing winter rapeseed. p. 12. (PLON, Vol. 4, No. 7, 1953.)

SO: Monthly List of East European Accessions, L.C., Vol. 3, No. 4, April, 1954.

MOLDENHAWER, KONSTANTY

Mak uprawny. (Wyd. 1.) Warszawa, Państwowe Wydawn. Rolnicze i Lesne, 1956.
55 p. (Cultivated poppy. 1st ed.)
DA Not in DLC

SG: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957 . Uncl

Country : POLAND
Category: Cultivated Plants. Grains

M

Abs Jour: RZhBiol., No 11, 1958, No 48862

Author : Moldenhawer, Konstanty

Inst :

Title : On the Problem of the Appearance and Formation of
Rameose Spikes on Rye.

Orig Pub: Acta agrobot., 1956, 4, 203-214

Abstract: A brief review of literature by different authors.

Card : 1/1

MOLDENHAUER, K.

AGRICULTURE

periodicals: NOWE ROLNICTWO Vol. 8, no. 1, Jan. 1959

MOLDENHAUER, K. The poppy and its economic importance. p. 34.

Monthly List of East European Accessions (EEAI) LC Vol. 8, no. 5
May 1959, Unclass.

MOLDENHAWER, Konstanty

The Institute of Garden Plant Breeding of the Department of Gardening
and Domestic Cultures of the Higher Technical School in Hanover, the
German Federal Republic. Postbox nauk roln 7 no.1:111-114 Ja/F '60.
(EEAI 9:10)

(Germany, Western--Gardening)

MOLDENHAWER, Konstanty

A mobile chamber for the freezing of plants under natural field conditions. Postepy nauk roln 8 no.5:113-118 S-0 '61.

(Plants)

MOLDSHAVER, Konstanty

Agricultural scientific research institutes in Hungary. Postepy
nauk roln 8 no.6:119-126 '61.

(Hungary—Agriculture)

MOLDENHAWER, Konstanty

Seed cakes and meals obtained after oil extraction from the seeds
of high value oil plants and their chemical composition. Postepy
nauk roln 9 no.4:17-23 Jl-Ag '62.

ZUBENKO, V.F.; VALOVENKO, D.K.; DOROSHENKO, Ye.I.: MOL'DERF
T.D., st. nauchn. sotr.; SALEY, A.K. [Salei, A.K.], st.
nauchn. sotr.; ALEKSANDROV, O.I.

[Informational material on mineral fertilizers, poisonous
and chemical substances used in animal husbandry] Dovidkovyi
material po mineral'nykh dobryvakh, otrutokhimikatakh ta
khimichnykh rechovynakh, shcho zastosovuiut'sia v tvaryn-
nytstvi. Zhytomyr, 1964. 106 p. (MIRA 18:6)

l. Zhitomir (Province). Sil's'kohospodars'ka doslidna stan-
tsiya.

JASINSKAITE, J.; KERVYTE, A.; MATKUTE, I.; MOLDERYTE, B.; MARVYDAITE, O.;
PAZUSYTE, A.; PUODYTE, M.; RADZEVICIUTE, D.; REKSNYTE, B.; SEPETYTE, O.;
TREBUTYTE, M.; VALAKEVICIUTE, I.; ZINKEVICIUTE, Z.

The incidence and piperazine therapy of ascariasis among students
of the Vilnius Republican School of Medicine. Sveik. apsaug. no.12:
41-43 '62.

I. Respublikines Vilniaus medicinos mokyklos mikrobiologijos burelis.
Mokyklos direktorius -- R. Markauskas; burelio vadovas -- J. Rubikas).
(PIPERAZINE) (ASCARIASIS)

SHATEMIROV, K.Sh.; MOLDOBAYEV, S.

Composition and properties of colored clays of northern Kirghizia
and possibilities for their industrial utilization. Izv. AN Kir.
SSR. Ser. est. i tekhn. nauk 2 no.11:143-152 '60. (MIRA 14:10)
(Kirghizistan—Clay—Analysis)

MOLDOBAYEV, S.

Mineralogical composition of the colored clays of northern
Kirghizia. Izv.AN Kir.SSR.Ser.est.i.tekh.nauk 4 no.9:129-139
'62.
(Kirghizistan--Clay--Analysis) (MIRA 16:4)

MOLDOKMATOV, DZ^h. Cand Med Sci -- (diss) "Types of ~~virological factors~~ ^{Virological factors} ~~infective agents in~~ ^{of} various forms different types of tuberculosis in Kirgizia". Frunze, 1956. 11 pp 22 cm. /
^{Marxist} (Inst of Physiology, Regional Pathology and Surgery, Acad Sci Kazakh SSR)
120 copies (KL, 10-57, 104)

-24-

MOLDOOKMATOV, D.

Types of causative agents in various forms of tuberculosis in
Kirghizia. Sov.zdrav.Kirg. no.1:50-54 Ja-F '58. (MIRA 13:7)

1. Iz kafedry mikrobiologii (zav. - prof. S.I. Gel'berg) Kir-
gizskogo gosmedinstituta.

(KIRGHIZISTAN--MYCOBACTERIUM TUBERCULOSIS)

KAZAKBAYEV, A.; MOLDOKULOV, S., red.; BEYSHENOV, A., tekhn. red.

[Fourtieth anniversary of Lenin's plan for the State Commission for the Electrification of Russia and electrification of Soviet Kirghizistan] Lenindik Goelro planynyn 40 zhyldygy zhana Sovettik Kyrgyzstandy elektrleshtiruu. Frunze, Kyrgyz mamlekettik basmasy, 1961. 38 p. (MIRA 15:3)
(Kirghizistan--Electrification)

15(9)

RUM/3-59-8-10/32

AUTHOR: Moldoneanu, A., EngineerTITLE: A New Branch of the Rumanian Chemical Industry - the Synthetic-Rubber Industry

PERIODICAL: Revista de chimie, 1959, Nr 8, pp 459-460 (Rumania)

ABSTRACT: The author first emphasizes the decisions of the 2nd Congress of the Rumanian Communist Party to develop the chemical industry. Due to the Communist regime, the author affirms, chemical production for 1959 will be tenfold that of 1958. One of the major units of development of the synthetic chemical industry is the plant for synthetic rubber and petrochemical products (Combinatul de Cauciuc Sintetic si Produse Petrochimice) which is being built quickly at Borzești. The author describes the importance of the rubber industry all over the world, and affirms that the Soviet Union was the first country in the world which introduced 26 years ago industrial-scale production of synthetic rubber based on a process established by Soviet scientist S.V. Lebedev. After the USSR, Germany, the

Card 1/5

A New Branch of the Rumanian Chemical Industry - the Synthetic-
Rubber Industry

RUM/3-59-8-10/32

United States, and Canada built synthetic-rubber factories based on different processes. The production of the first Rumanian synthetic rubber (at Borzesti) will be based on the production of butadiene-methyl-styrene rubber. Butadiene is obtained from n-butane and the butane-butylene fraction supplied by the neighboring refinery. The rubber produced will satisfy internal needs and will be partly exported. Rubber production means a valorization of the petroleum gases at a value 40 times higher than the initial product (calculated by comparing the prices of gas and synthetic rubber). Butadiene will be obtained through dehydrogenation in two steps of n-butane in adiabatic reactors. The first dehydrogenation of the butane to butylene will be achieved in reactors with powdered catalysts, in fluid bed. As a second monomer for the production of Rumanian rubber α -methyl-styrene has been chosen for economic and technological

Card 2/5

RUM/3-59-8-10/32

A New Branch of the Rumanian Chemical Industry - The Synthetic-Rubber Industry

reasons. The α -methyl-styrene will be obtained by alkylation of benzene with propylene and dehydrogenation of the intermediate product (cumene) in adiabatic reactors. These products will be supplied by refineries: the benzene from Ploesti and Borzesti, and propylene from the Refinery of Borzesti, in the form of a propana-propylene fraction. α -methylstyrene is better for production, especially in the recovery of non-reacted monomers, as it avoids a series of difficulties caused by styrene due to its self-polymerization in the degassing columns of the latex. The rubber obtained by copolymerization of butadiene and methyl-styrene has practically the same properties as the butadiene-styrene rubber. The intermediate product, isopropylbenzene or cumene, is used as a raw material for production of phenol and acetone through oxidation with air of isopropylbenzene and catalytic scission of the hydroperoxide formed. By that means, the

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RUM/3-59-8-10/32

A New Branch of the Rumanian Chemical Industry - The Synthetic-Rubber Industry

same plants will produce 50,000 metric tons of phenol and 11,000 metric tons of acetone per year. The phenol obtained will be the basic material of the "relon" type fibers, plastics, insecticides, etc. The copolymerization of butadiene and α -methylstyrene is made in an emulsion at a temperature of +5°C, in a continuous process. As an initiator of the reaction, isopropyl-benzene hydroperoxide is used as well as an active redox system. The possibility of making rubber with oil is also provided. If the whole production of Combinatul de Causiuc would be rubber with oil, the capacity would increase from 50,000 tons per year to 60,000 tons per year without any additional investment, the author writes. The aid given by the Soviet planning institute GIPROKAUCHUK is also mentioned. Placing the Synthetic-Rubber Plant at Borzesti in the vicinity of Refinery Nr 10, and the Thermal Power Plant and Combinatul Chemic Borzesti ensures close cooperation.

Card 4/5

RUM/3-59-8-10/32

A New Branch of the Rumanian Chemical Industry - The Synthetic -
Rubber Industry

tion between the plants, resulting in a greater efficiency for the whole industrial complex of Borzești. As for future developments, it is provided to utilize more completely the residual gases resulting from the production of synthetic rubber. From isobutylene and isobutane a new very valuable rubber will be made, - butyl rubber - with small investment costs, within the framework of the Chemical Combinat. Butyl rubber can be made by copolymerization of iso-butylene with 1-3% isoprene, at a temperature of -80 to -100°C.

Card 5/5

MOLDOSHEV, M., student IV kursa

Ichthyological expedition to Susamyr Valley in the summer of
1953. Sbor.nauch.rab.stud. Nauch. stud. ob-va Kir.un. no.2:63-65
'59. (MIRA 13:7)

I. Biologicheskiy fakul'tet Kirgizskogo gosudarstvennogo
universiteta.
(Susamyr Valley--Fishes)

MOLDOTOSHEV, B.

Mechanism of the resistance of prelimiarly irradiated animals.
Sov.zdrav.Kir. no.2:41-44 Mr-Apr '63. (MIRA 16:5)

1. Iz kafedry normal'noy fizioligii (zav. - masluzhennyy deyatel' nauki Kirgizskoy SSR, prof. Ye.I. Bakin) Kirgizskogo gosudarstvennogo meditsinskogo instituta (rektor - chlen-korrespondent AN Kirgizskoy SSR V.A. Isabayeva).
(RADIATION--PHYSIOLOGICAL EFFECT)

MOLDOVAN, A.

RUMANIA/Chemistry of High Molecular Substances.

I

Abs Jour : Ref Zhur - Khimiya, No 7, 1958, 23734

Author : C. Bodea, A. Moldovan

Inst :

Title : Influence of Carotinoids on Processes of Autoxidation and Polymerization. Report V. Autoxidation and Disacrylic Polymerization of Acrolein in Presence of α - and β -Carotins.

Orig Pub : Studii si cercetari de chim., 1956, 4, No 4-4, 161-165

Abstract : It is shown that an addition of α - and β -carotin (I) to acrolein (II) (even in the amount of 2 mg of I per 100 mg of II in 40 lit of C_6H_6), which is acted upon by diffused sunlight, inhibits the process of II autoxidation initiated by acyl and peracyl radicals (an induction period of 1 jour duration arises); I acts as an acceptor of the peroxide O_2 . Small amounts of I accelerate the disacrylic polymerization of II (about 5 times more of

Card 1/2

RUMANIA/Chemistry of High Molecular Substances.

I

Abs Jour : Ref Zhur - Khimiya, No 7, 1958, 23734

disacryl is formed as at the check experiment during the same time) at the expense of the formation of I hydroperoxide, as it seems. The conclusion is arrived at that I can be used as an initiator of polymerization reactions of II.

See report IV in RZhKhim, 1956, 43076.

Card 2/2

USCOMM-DC-55,354

Moldovan, A.

RUMANIA

MOLDOVAN, A.

Pharmacist

Pharmacy of the "Brincovenesc" Hospital (Farmacia din Spitalul "Brincovenesc"), Bucharest.

Bucharest, Farmacia, No 2, Feb 63, pp 115-118.

"Preparation of a solution of injectable sodium lactate by using officinal lactic acid."

RUMANIA

BAIES, I., Dr, Prof, CONTIU, I., Dr, MICLEA, E., Dr, ONET, E., Dr,
POP, M., Dr, and MOLDOVAN, A., Dr, of the Faculty of Veterinary
Medicine (Facultatea de Medicina Veterinara) Cluj.

"Epizootiologic and Anatomic-Clinical Studies on Outbreaks of
Aujeszky and Atypical Hog-Cholera Diseases."

Bucharest, Revista de Zootehnica si Medicina Veterinara, Vol 16,
No 8, Aug 66, pp. 42-48.

Abstract [Authors' English summary modified]: A study of two
outbreaks of Aujeszky's disease in young and suckling pigs. The
atypical nature of the symptoms is described; the anatomic-pathol-
ogic changes were characterized by inconsistent hemorrhagic
diathesis. Economic losses as a result of a failure to reach a
correct diagnosis promptly are pointed out, on the basis of one
of the two described outbreaks in which hog cholera was also
found.

Includes 6 figures and 5 references, of which 3 Rumanian
and 2 French.

1/1

MOLDOVAN, A.I., inzh.

Overall mechanization of underground mining of wall stone.
Mekh.stroi. 19 no.12;12-13 D '62. (MIRA 15:12)
(Moldavia--Quarries and Quarrying)

MOLDOVAN, A.I.

Mechanization of labor-consuming processes in quarrying wall
stone. Sbor. trad. Kish. otd. NIISMI no.4:38-46 '64.

(MIRA 18:2)

MOLDOVAN, Al.; BAUBEC, G., Ing.; NICULESCU, D., Ing.

The art of concreting. Constr Buc 16:3 19 D :64.

1. State Committee for Constructions, Architecture, and Systematization
(for Baubec, Niculescu).

MOLDOVAN, Al.; BIRIS, I.

Treating the glassblowing tubes for elimination of the iron.
Industria usoara II no.6:322 Je '64.

1. Turda Glass Manufacture.

Moldovan, C.

MOLDOVAN, C.; ELISABETA, G.

MOLDOVAN, C.; ELISABETA, G. Results of the application of polarographic analysis. p. 58.

Vol. 8, no. 2, Feb. 1956.

METALURGIA SI CONSTRUCTIA DE MASINI.

TECHNOLOGY

RUMANIA

So: East European Accession, Vol. 6, No. 5, May 1957

ACCESSION NR: AP4015868

R/0017/63/000/008/0498/0501

AUTHOR: Dragos, Z. (Engineer); Moldovan, C. (Engineer); Epure, M. (Engineer)

TITLE: The use of sound and ultrasound in the casting of metal

SOURCE: Metalurgia, no. 8, 1963, 498-501

TOPIC TAGS: metal casting, ultrasound, soundwave, vibration, degassing

ABSTRACT: The authors summarize the various applications of sound and ultrasound in metal casting, calling attention to the indications and advantages/disadvantages of each method. The principal use of ultrasound is to obtain a finer crystalline structure, while the main effect of using sound is to cause very thorough stirring of the entire mass of liquid metal, resulting in degassing and more amorphous growth. Application of ultrasound may involve either irradiation of cast parts or irradiation of the liquid metal before casting. The use of sound in casting is simpler and more widely applicable than that of ultrasound, especially in the form of an 50-cycle electrodynamic vibrator which is resistant, easy to maintain and adjustable for a wide range of powers. The efficient degassing, visible to the naked eye, does not lengthen the casting period as it

Card 1/2

ACCESSION NR: APL015868

can be performed, while removing oxidation products from the surface of the liquid, by simply resting the pot on the vibrator. Such an installation reduced the amount of rejects by 47 percent in the manufacturing of pistons made of the alloy AlCu₄MgNi₂; the gas content of the alloy decreased from 11.5 to 2.5 percent, traction resistance increased by an average of 12 percent, density of the metal increased, and hardness increased an average of 12 percent. The use of sound was also tested on 5 ingots of liquid steel, each 700 mm high, vibrated for about 15 minutes with a 50-cycle, 250 w vibrator. Because of the favorable results, a 5-kw, 50 cycle per second device capable of processing much larger pieces was built and is described. Results obtained with this device justify extension of this method. Orig. art. has: 4 figures.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 21Oct63

ENCL: 00

SUB CODE: ML

NO REF Sov: 000

OTHER: 000

Cont 2/2

PANTEA V., Ing.; MOLDOVAN, C., ing; TACU, T., ing.; EPURE, M., ing.

Electromagnetic hardening control system based on the
changing of steel magnetic properties. Metalurgia constr
mas 15 no.8:508-511 Ag '63.

DRAGOS, Zamfir, ing.; MOLDOVAN, Cornel, ing.; EPURE, Mircea, ing.

Use of sound and supersonics in the foundry. St si Teh Buc 15
no.4:16-17 Ap '63.

1. Collective of the "Tehnica nouă" Foundry and the Section of
the Foundry of the "23 August" Plant, Bucharest.

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